

MODEL No. 6

Instructions

LITTLE X GIANT



**LITTLE
GIANT
PRESSES
—
FEEDERS
ENVELOPE
SHEET**

PARTS & SERVICE INFORMATION

Jack L. Popkin & Co.

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ATF LITTLE GIANT

MODEL 6

Introduction

Design simplicity of the ATF Little Giant, coupled with the fact that adjustments have been reduced to a minimum, means that even an inexperienced pressman can quickly become acquainted with its operation. All Little Giant presses are test run and adjusted before leaving the factory and again after installation so that the pressman need only be familiar with makeready, the usual adjustments to take care of sheet sizes on individual jobs, lubrication, and the actual operation of the press. All these points are covered in detail in the pages of this manual.

Specifications

Largest Sheet	12x18 inches
Smallest Sheet	3¼x5½ inches
Printing Area	11¾x17½ inches
Type Bed Size	15¼x18½ inches
Heaviest Stock	4 ply card
Lightest Stock	Onionskin
Feeder Capacity	17½ inches
Delivery Capacity	23 inches
Speed Range	2500 to 5000
Floor Space	34" (37" with Roller Rack)x88"
Motor	2 h.p.
Net Weight	2730 lbs.
Shipping Weight	3000 lbs.

STANDARD EQUIPMENT

One Set Cast Rubber Rollers
One Set Extra Roller Stocks
Two Chases
One Press Blanket
Alemite Grease Gun
Tools

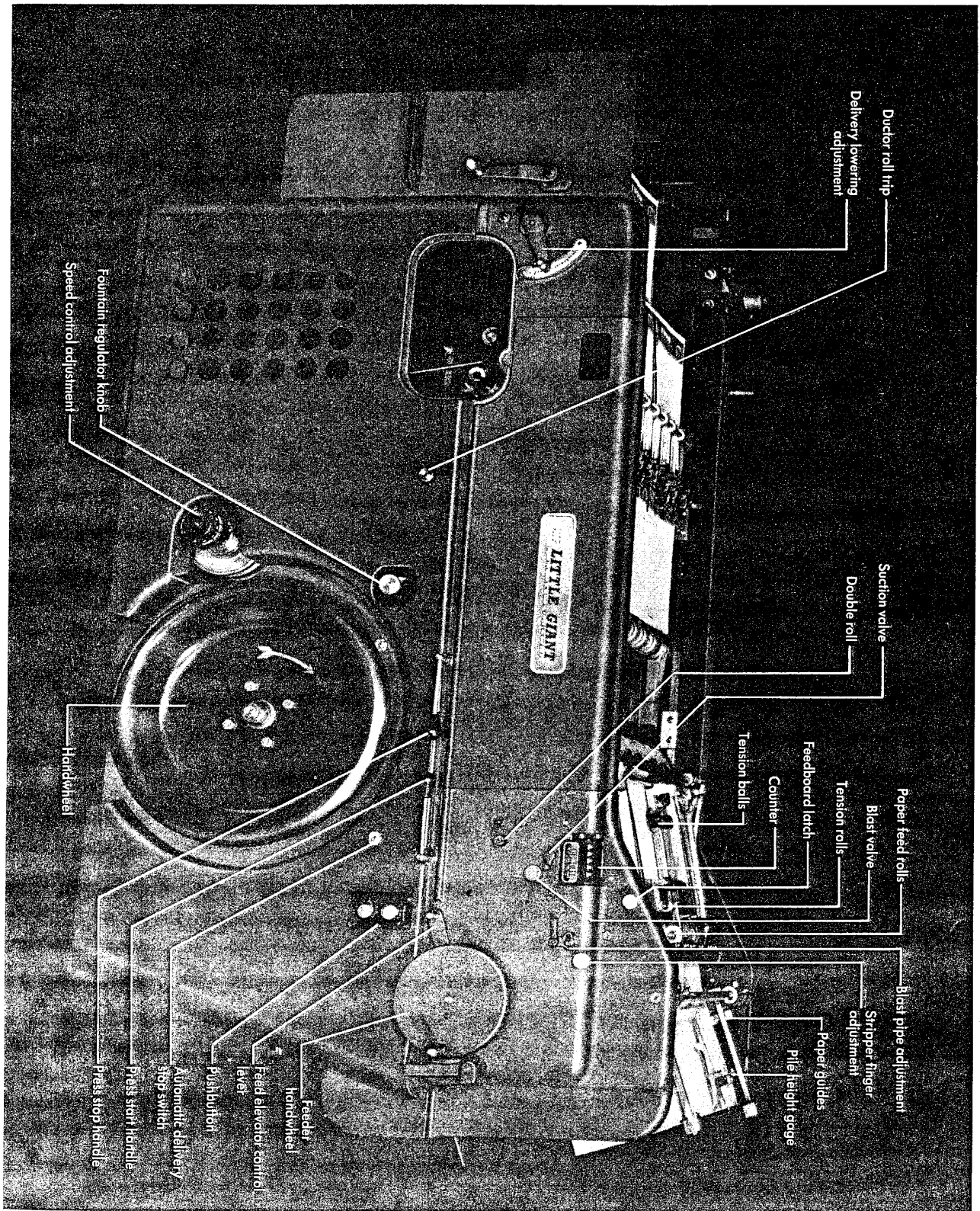
AVAILABLE ACCESSORIES

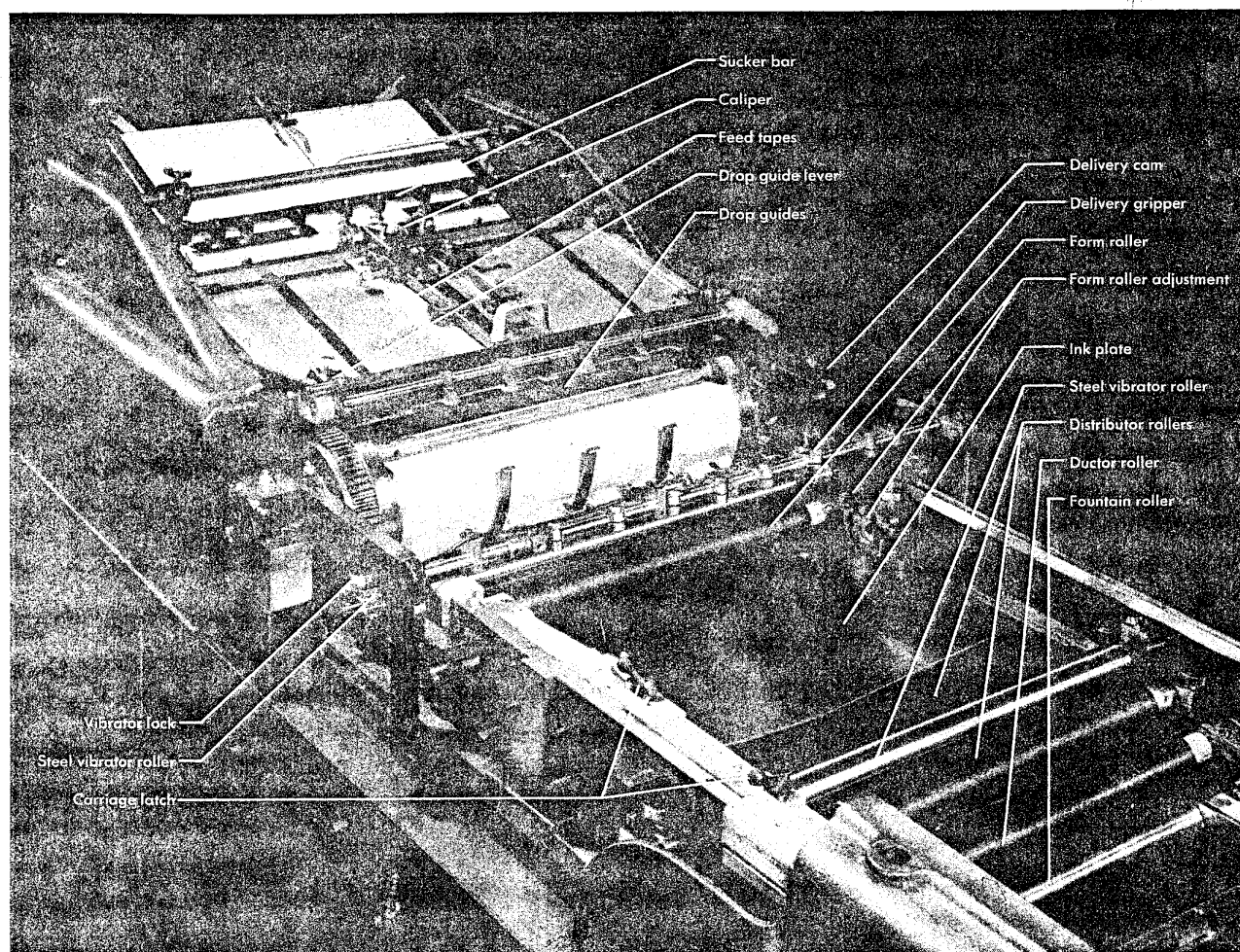
(Extra Charge)

Overhead Gas Heater
ATF Flo-Mix Non-Offset Gun
(Bracket or Portable Model)

AMERICAN TYPE FOUNDERS

200 ELMORA AVENUE, ELIZABETH, NEW JERSEY





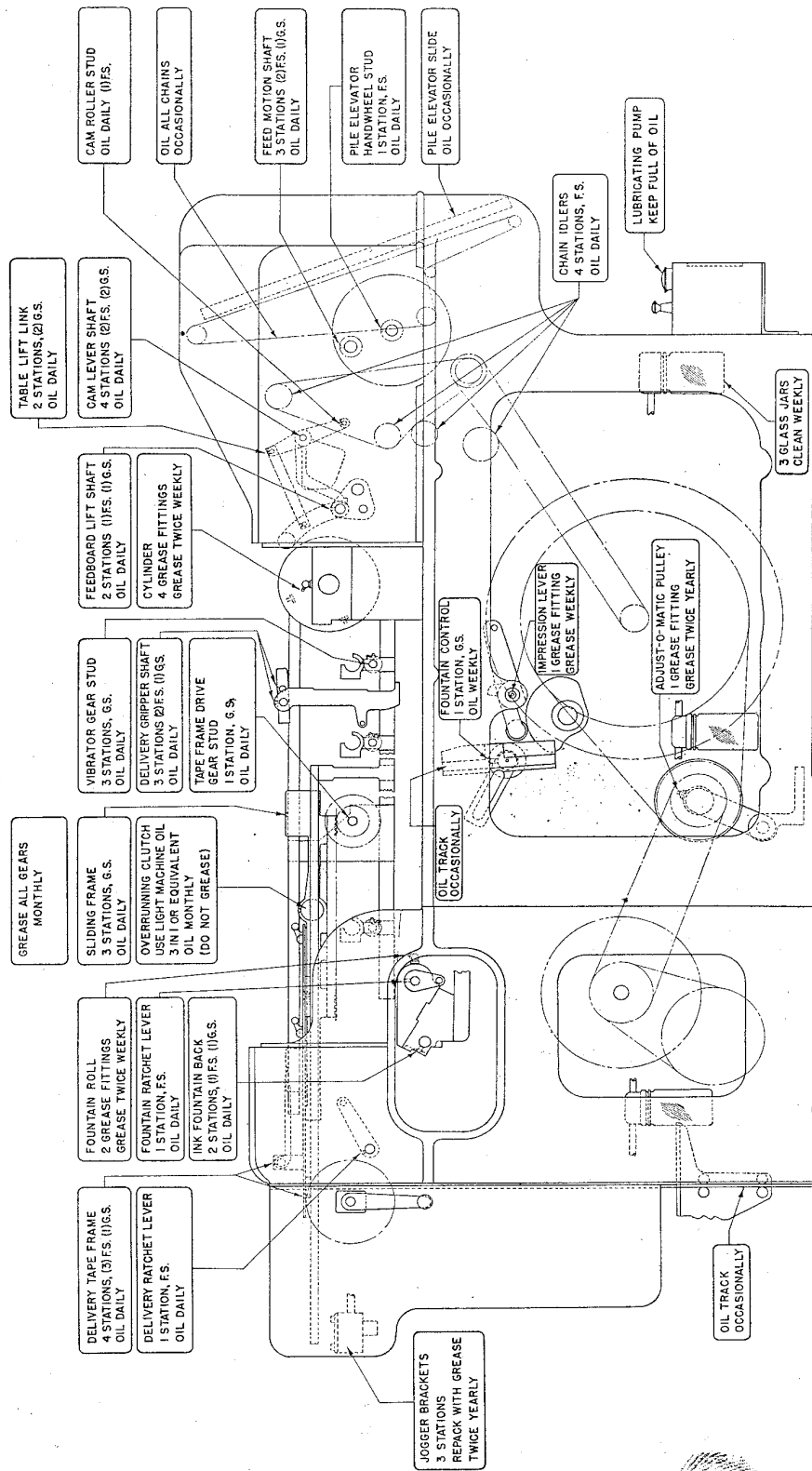
GEAR SIDE OF LITTLE GIANT, MODEL 6

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Lubrication Chart—Little Giant Model 6

Daily: Oil all stations, add oil to blower cups.
 Weekly: Grease cylinder and drive mechanism alemitte fittings. Oil all moving parts.
 Monthly: Grease pulley shaft and cam-shaft bearings (do not overfill). Grease all gears.



Adjustments, Operation and Care

The Feeder Side of the press is the handwheel side. The Gear Side opposite. The Delivery End and Feeder End are self-explanatory.

In most cases the Little Giant will be shipped as a complete unit ready to run after leveling and wiring press.

If your press is not working smoothly the ATF Service Department is always ready to help you.

When ordering parts from your nearest ATF Branch, always mention the Serial Number of the press for which they are intended. The Serial Number of the press is stamped on the top side of column on Feeder Side of Delivery End.

The Serial Number also appears on the nameplate mounted on the inside of the Gear Side Feeder Frame.

Oiling and Greasing the Press

See Lubrication Chart, page 4

Oil: Use only a medium grade of clean mineral oil. NEVER use so-called dripless oil or oil containing graphite, soap, or other foreign substances.

To Oil Press: Raise feedboard and delivery carriage. Oil holes are easily accessible. Start oiling press at same place each morning, continuing around until all holes are oiled. It is a good practice to oil every moving part. If there is no oil hole, oil the part at its point of contact with the bearing. A little extra oil will save many delays. Occasionally lubricate all gears with a good grease. We recommend a gear compound obtainable at any ATF Branch.

Location of Alemite Stations:

- 2 Stations located on cylinder shaft housings, gear and feeder sides. Grease twice weekly.
- 2 Stations on cylinder drive gear. Grease twice weekly.
- 1 Station in Impression Lever Stud on feeder side of press. Grease twice weekly.
- 2 Stations in Ink Fountain Cheek Pieces. Grease twice weekly.
- 1 Station in Adjust-O-Matic Pulley. Grease monthly.

Automatic Oiling: All presses are specially equipped with the Bijur Oiling System to maintain a flow of oil into the bed tracks, crosshead and pump at all times.

The discharge rate of the lubricator is set at zero for one cubic cm. or thirty drops of oil every four minutes. This feeds the pump three drops, the tracks twenty-five drops and the felt roller two drops every cycle.

The crosshead drive bearing is oiled from a felt roller supported in a trough bracket in the center of the column. The felt roller should just contact the bearing and should

turn slightly each cycle. The proper contact may be obtained by adjusting the support bracket up or down.

Use SAE 30 oil for pump and manual oiling.

Ball Bearing Motor: The bearings are packed with grease upon assembly at the factory. The initial pack is sufficient for approximately one year under ordinary operating conditions. Periodic inspection is, however, advisable.

All motor repair work to be done by an electrician.

After each year of service, the bearing caps should be removed and the bearings, housings and housing caps thoroughly cleaned with carbon tetrachloride. All grease and cleaner should be wiped from the windings.

After cleaning, apply the clean grease by hand over and between the balls. The use of too much grease will cause excessive bearing temperature and grease leakage into the motor. Grease deteriorates insulation; care must be exercised to prevent contact of grease with the windings.

Enough grease to pack the external chamber of the bearing housing one-third to one-half full is ample.

Never force grease into the bearing assembly.

This results in the chamber being overpacked. With a rise in bearing temperature inevitably following, the grease is thinned out and is forced through the bearing, through the internal grease seal along the shaft into the motor where it is thrown onto all adjacent parts of the motor.

Among the greases satisfactory for ball-bearing motors having maximum speeds of 2400 r.p.m. or less, are:

Texas Oil Company's grade "Marfax" No. 3.

Sinclair Refining Co. Bearing Grease, grade "AF."

Standard Oil Company's grade "Superla 4X."

For other greases, obtain recommendations from the grease manufacturers.

On single phase A.C. and D.C. motors the commutator should be kept free from dirt and oil. Replace the brushes when worn down too short. A piece of No. 00 Sandpaper (not emery cloth) applied to the commutator once a month will remove any accumulation of dirt and prevent the brushes from sparking. Clean the commutator with a clean, dry rag afterward.

All motor repair work to be done by an electrician.

Control Switch

Raise **Start Lever**—this releases brake and sets up electrical circuit for starting press.

Top **Green Button** (on Push Button Station) starts press.

Bottom **Red Button** stops press.

With latch over stop button, push top (Start) Button for inching press.

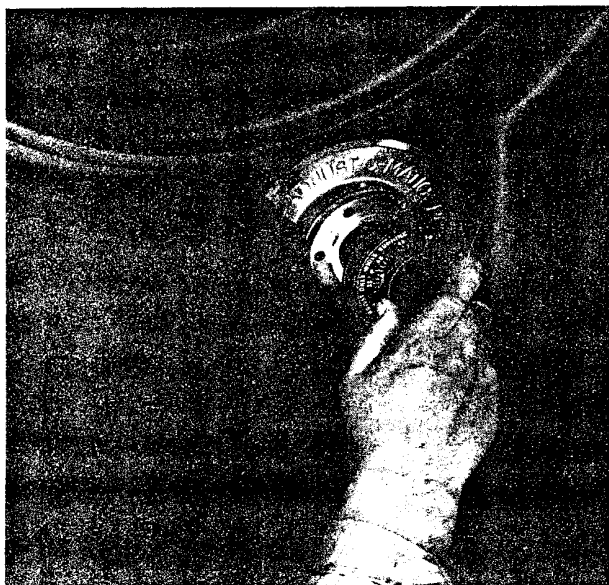
To stop press and apply brake, raise **Stop Lever**.

When wired in this manner, operating is safe as press can be started only by pressing top (Start) Button. Moreover if press stops from failure of electrical current, press will not start when electrical current goes on again since three-wire control system is used.

Speed Changing Device

The variable speed control can be set accurately and quickly for any speed from 2500 to 5000 per hour. To adjust for higher speed turn knob towards the right and to the left to reduce speed.

A calibrated dial on handle of Adjust-O-Matic pulley tells at a glance the running speed of the press. The dial reads in 100 impressions per hour. Speed must be adjusted while press is running.



Rollers

The ATF Little Giant, Model No. 6, comes equipped with 3 steel vibrator rollers, a 2 inch max. diameter rubber ductor roller, and five 2 inch max. diameter rubber rollers (three form rollers and two distributing rollers). One extra stock is furnished for each roller.

The form and distributing rollers are interchangeable; but due to the fact that the roller may vary slightly in diameter, it is advisable to number them the first time they are used by notching the roller core. The roller nearest the cylinder may be No. 1 and so on.

The ductor roller is adjustable to both the ink plate and the fountain roll.

NEVER RUN THE PRESS UNLESS THE FORM AND DISTRIBUTOR ROLLERS ARE HELD IN BY THE VIBRATORS, OR REMOVED. The form roller sockets are open, and the form rollers will jump out and seriously damage the press if they are not held in place by the vibrator roller.

Setting the Rollers

A. Distributing Rollers

1. Run bed to delivery end.
2. Place the distributing rollers in the sockets.
3. Raise the rollers by means of the knurled adjusting nuts above the sockets until the rollers are just clear of the ink plate.
4. Lower the rollers until they just contact the ink plate. The flat on each roller must be the same at each end.
5. Loosen the socket head cap screws holding the sockets and move sockets toward the vibrator roller until the distributing rollers just make contact. Lock in position.

B. Form Rollers

1. Run bed to feeder end.
2. Turn form roller sockets so that the open ends point toward the vibrator roller brackets. Place the form rollers in position and raise the sockets until the rollers clear the ink plate. Lower the rollers until they just contact the ink plate.
3. Lock the vibrator rollers in their sockets, making sure that the vibrator gear is in mesh with the fiber driving pinion. Do not lock the sockets too tightly because this will prevent the bronze bearings from turning.
4. Loosen the socket head cap screws holding the sockets and move the sockets toward the vibrator roller until the form rollers just make contact. Lock in position. This setting must be made when the form rollers are off the ink plate.

Adjustment and Care of Rollers

Good press work requires good rollers properly set. Many troubles are due to improper adjustment of the rollers. Rollers should be set to touch the form and vibrators with as little contact as possible. New rollers should be watched carefully and checked frequently. Form rollers set too low, or not in contact with the vibrators, may jump or slide on the form and cause streaks, besides wearing the rollers. Form roller bearings turned wrong may also cause this.

The rollers shipped with your Little Giant Model No. 6 are synthetic rubber, and are compounded so that there is no seasoning required as is with composition rollers. When storing for a considerable length of time wrap in brown paper and keep in cool dark place.

For daily washup of these synthetic rubber rollers use kerosene, naphtha or any lighter hydrocarbons which do not conflict with state safety law.

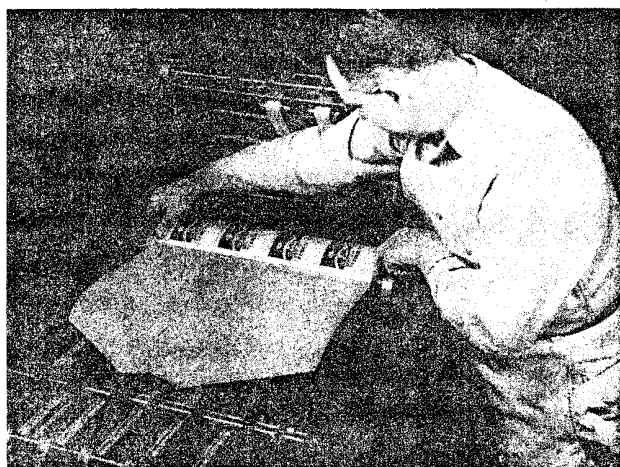
For a more thorough cleaning when the condition of the roller indicates the need, use a regular type wash in sparing amounts assisted by a sprinkling of pumice on a cleaning pad.

In the event that cleaning of rollers is neglected the surface should be buffed to remove any serious accumulation of dried ink.

This information applies to rollers shipped with the press; for other type rollers it will be advisable to contact the roller manufacturer for specific instructions.

Do not allow the press to stand too long without releasing the rollers.

If roller trouble not covered in the foregoing is experienced, consult your roller maker.



Cylinder Packing

The width of the cylinder between bearers is 18½ inches. When packing the cylinder follow the procedure outlined below.

1. Raise feedboard.
2. Turn press until reel shaft is up with delivery grippers going away from cylinder.
3. Tighten reel shaft with pin wrench; until locking pawl can be released from the ratchet on reel shaft. Release drawsheet.
4. Turn press until cylinder grippers close (bed delivery end), and loosen the two socket set screws holding the cylinder gripper bar in place. Remove cylinder gripper bar.
5. Remove old packing and replace with new. Holes to fit over the three packing pins should be punched clean before the packing is placed on the cylinder.

The cylinder is undercut .055 and the blanket is .032 thick. The packing should consist of two or three S. & S.C. for makeready purposes, and the rest manilas. The grain on all manilas should run parallel with the cylinder. The full packing should be flush with the cylinder bearers. Check with a straight edge.

6. Replace gripper bar assembly, making sure that the gripper operating levers are on top of the grippers, and tighten the socket set screws.

Warning—Do not fail to tighten set screws, or damage may result when turning press.

7. Turn press, smoothing out packing by hand. Slip tail of drawsheet through slot in reel shaft and tighten by turning shaft with pin wrench. Lock by dropping pawl into locking ratchet.

It is not practical at any time to overpack the cylinder. An overpacked or underpacked cylinder will cause wear on the form and prevent synchronizing of bed with cylinder, causing the packing to creep forward or pull away from the packing clamps.

Forms made up entirely of new type are type-high (.918 inch). In mixed forms (forms which are composed of both type and plates), the plates will often be found under, or over, type-high. When this condition exists, it is absolutely necessary that the pressman bring the plates to the proper height so that the form is correct before starting the overlay.

Cylinder Gripper

Check opening of cylinder grippers on impression for opening—they should open to ⅜ inch—they may be adjusted by long ¼-inch rod which is threaded at both ends. Allen set screw for releasing rod is on bracket at end of rod under feedboard.

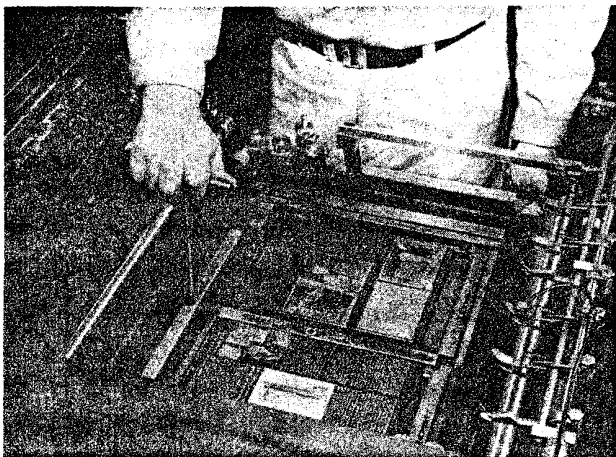
Checking Cylinder Grippers

All cylinder grippers should open evenly and any delay in one or more grippers will cause trouble with the delivery of the sheet. To check grippers proceed as follows:

1. Turn press until bed is at delivery end with grippers closed.
2. Gripper shaft cam roll finger must be free from operating cam.
3. Place .035 feeler or a two-point lead between cylinder grippers and operating levers to check if all grippers are set evenly.
4. To adjust operating levers, loosen lever and tap up or down until grippers are all set evenly.

Putting Form on Press

The bed of the press must be kept clean and free from dirt and rust at all times. Put a thin film of oil on the bed



before cleaning. Never use sandpaper or emery to remove dirt from bed of press.

1. Run bed to feeder end. Loosen two locking screws and raise delivery tape frame. Run bed to delivery end.
2. Wipe off bed and back of form carefully. Place form on bed with head of chase toward cylinder. The SL (sheet line) is marked on the head of the chase. Place sufficient furniture between chase and locking quoin (supplied with press) to insure that chase will be securely locked. A card, lead or nonpareil can be placed between chase and ink plate to obtain necessary margin.
3. Loosen quoins in chase and push chase against bed bearer on the side on which the side guide is used.
4. Lock chase securely on bed with locking quoin.
5. Take up slack in quoins and plane form carefully.
6. Lock up quoins evenly. Note that the form must be positioned in the chase as the front guides are not adjustable. Lock quoin to same number each time used to keep chase square.

Pulling Impression

1. Turn press until bed is on feeder end.
2. Place sheet on feedboard with lead edge against drop guides.
3. Pull up on starting lever.
4. Press start button and press will print and lift off impression automatically.
5. When pulling impression with feedboard up, use impression latch only.

CAUTION—do not disturb feedboard lift arm as this will break arm or cylinder gripper shaft cam finger.

Delivery Jogger

The delivery pile is designed to hold 23 inches of paper.

To set the delivery joggers, move the bed to delivery end and set each jogger to half the length of the sheet using the graduations on the delivery jogger support bar. Then set the rear guides to the width of the sheet.

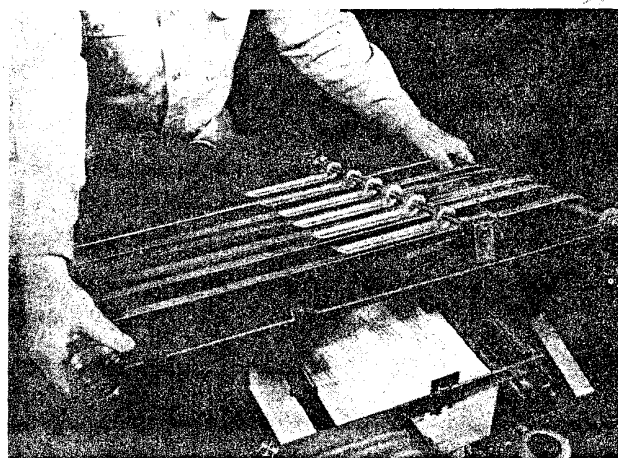
Raise table until it just contacts bottom of jogger plates. Table may be lifted by pushing up on two table support brackets (not on table plate) or it may be raised by turning elevating crank.

To set delivery lowering device pull out plunger and move lever to hole corresponding to thickness of paper. The index plate is calibrated in .001 inches.

A collar is provided on the feeder side jogger operating rod to reduce or stop the jogging action. With jogger in open position (with bed at feeder end) set collar and rubber bumper against corner bracket to stop jogging. The jogger stroke may be reduced by setting this collar slightly away from the corner bracket.

Reciprocating Carriage Delivery

To raise the delivery tape frame, turn handwheel until bed is at feeder end. Loosen tape frame latches on the gear side of delivery tape frame. Raise frame and slide along rail to delivery end of press. Frame may be rested on bracket fastened on to gear side guard. The frame should be raised during makeready and when adjusting the ink fountain. The frame can be held in a vertical position by sliding along rod until flange on frame engages slot in feeder side jogger bracket adjacent to the slide rod.



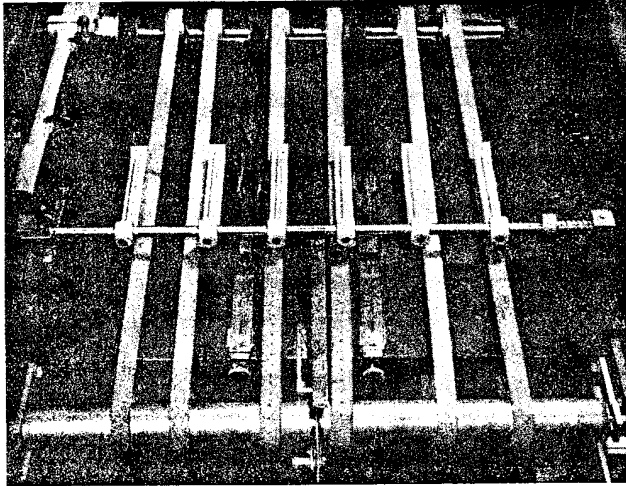
Delivery Tape Suction

Suction tubes are provided beneath the center delivery tapes to control sheets at high speeds. These can be removed when running curled or bulky cardboard stocks. An adjustable valve is provided on the G.S. delivery guard to permit adjusting amount of suction required for various weights of stock.

Delivery Tape Frame Clutch

This is an Over Running Clutch. This clutch engages automatically, and to disengage, the driving sleeve is pulled back. Use light oil to lubricate. Do not use grease.

To oil remove set screw in outer race. This is accessible through hole in sliding ring. After oiling be sure to replace set screw. Oil approximately once each month.



Automatic Delivery Stripper Fingers

The delivery stripper fingers are depressed automatically to assist in laying the sheet upon the tape frame. Some card stocks deliver better without this action which may be stopped by removing depressor cam from block on gear side of stripper shaft. The stripper fingers should be set to the delivery gripper bar in their UP position. The clearance between the tip of the stripper finger and the delivery gripper bar should be a nonpareil. In the depressed position, the finger should be the thickness of a two-point lead from the tapes. These settings may be made by rotating the stripper shaft in the cam-block and by adjusting the stop screw in the block.

Automatic Delivery Stop

The automatic stop device functions when a sheet does not reach the delivery grippers due to the feeder missing a sheet or the feeder taking two sheets and stopping at the caliper. This may also result if the cylinder grippers fail to take the sheet from the feedboard or if the delivery grippers miss the sheet on the cylinder.

The stop is controlled by an off and on switch above the flywheel. Off position is when toggle switch is toward delivery end of press.

Delivery Grippers

To set:

1. Move grippers towards cylinder (while cylinder is on impression) and onto gripper operating cam at edge of cylinder.
2. Set all grippers so that bottom of gripper rests evenly at edge of tympan paper, use light card or .010 feeler between grippers and tympan, set evenly.
3. If grippers are set evenly but too low so that they are nicking tympan, raise all fingers with adjusting screw under delivery cam on feeder side of press.
4. If grippers are set evenly but too high reverse adjustment of screw.

5. All grippers should be set to have .006 to .010 clearance between grippers and tympan at all times.
6. Keep grippers clean at all times as dried ink will cause trouble.

Delivery Gripper Bite Adjustment

The set screw on the outside of the delivery cam on the feeder side of the press can be turned clockwise for larger bite and counterclockwise for less. Too much bite will cause grippers to smudge ink.

Delivery Gripper Release Adjustment

Delivery Grippers should start to open just before sheet comes in contact with stripper fingers. If held by the grippers too long, the sheet will buckle and rebound. If released too soon, the sheets will drop before getting under the stripper fingers and be carried back onto the form rollers. To adjust opening and closing finger, which is located on roller bar feeder side delivery end, loosen the nut and slide stud in elongated slot. To open grippers sooner move stud toward feeder end; to hold sheet longer move stud toward delivery end.

CAUTION: Move adjusting finger carefully as the gripper operating lever must never bind against adjusting finger as this will cause lever to break off.

Automatic Feeder

The feeder is designed to feed all grades of stock from onionskin to four-ply cardboard. The feeder mechanism comprises the blast and suction parts, feed table, pile height gage and connections.

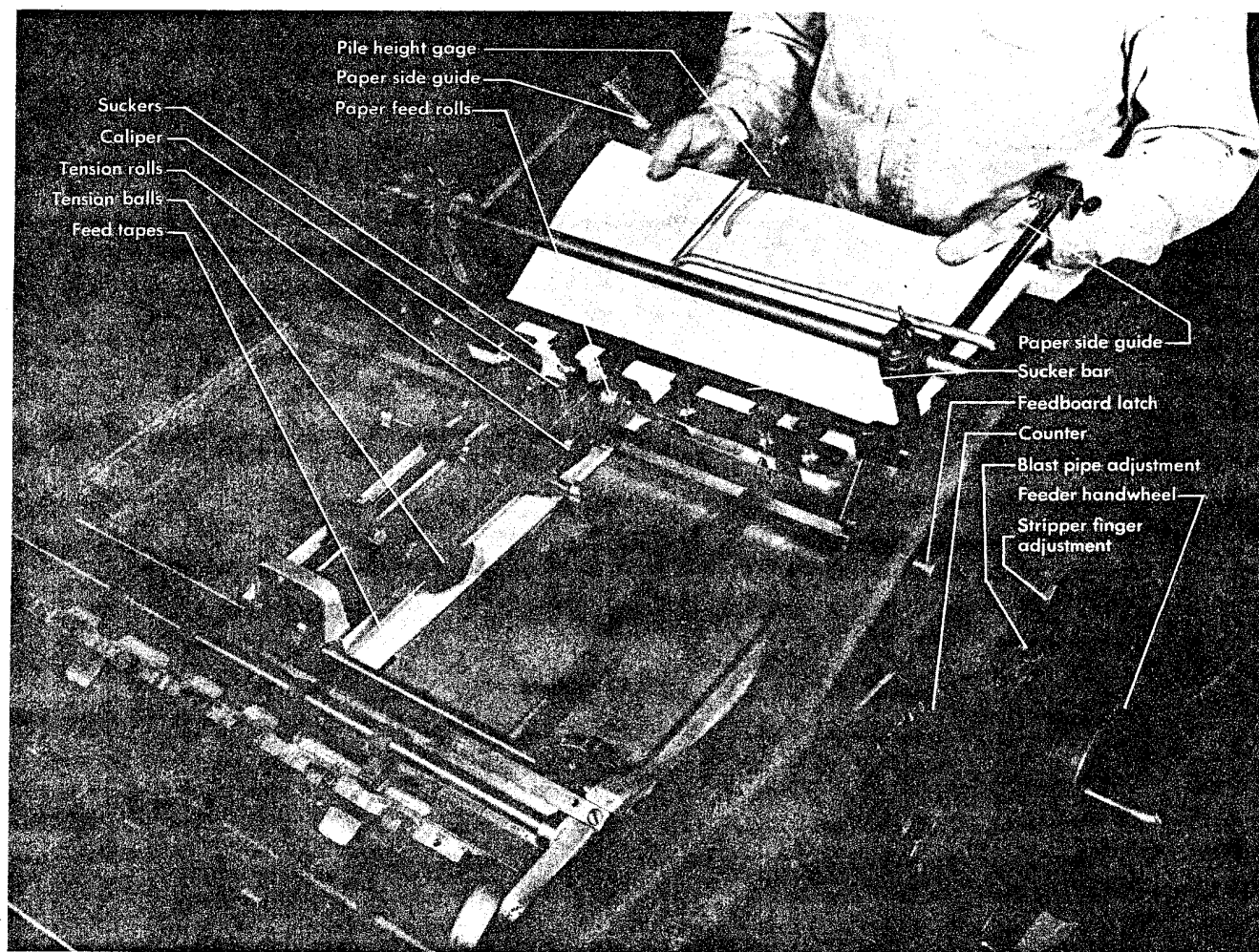
In setting up the feedboard, release the caliper finger lock nut and turn adjusting screw until only one sheet of the stock to be run will pass between the finger and the feedboard. Hold adjusting screw with one hand and tighten the lock nut with the other.

Move the side guide being used to half the width of the sheet being run. The square bar directly in front of the side guides is graduated to facilitate this setting. It should be made with the feedboard in its lowest position (bed at delivery end). Set side guide not being used far enough away from the edge of the sheet to prevent interference, then make final adjustments with the micrometer adjusting screw. Make feed rolls setting with a sheet on the feedboard with the leading edge against the front stops. Set the rolls so that they bear on the feed tapes at the tail of the sheet.

Setting Feedboard

Feedboard must be set .006 off tympan. Front edge of board must not drag or rub at any time. The adjusting screws under the feedboard which rest on pads in housing will adjust board to proper height. Be sure the eccentric lift rolls are set evenly under the board.

An easy way to do this is to place a tissue between adjusting screws and pads so that both papers are held tight. When the feedboard is in down position, set eccentric studs so that the lift rolls are snug against bottom of board.



Feeder Tapes

To replace the feeder tapes, cut old tapes and remove from feedboard. Loosen idler levers under feedboard and place new tapes 76-AL-83 in position. The top lap of the tape should point toward the feeder end. These tapes are provided with two coats of cement at the factory and need only a very thin even coating of glue.

To obtain a strong flexible joint, use belt cement, part number 499AL545, obtainable at your nearest ATF Branch. A good joint is necessary to insure proper feeding and register. Secure the glued ends of tape in tape clamps provided with press and allow to dry overnight. Care should be taken that the ends of the tapes are in line when clamped.

Sheet Bands

Sheet Bands must be run between conveyor tapes or outside of tapes, but never under the tapes as the starwheel will perforate the tape. The bands must be run between gripper or the gripper will strike and bend the sheet bands.

Drop Guide Adjustment

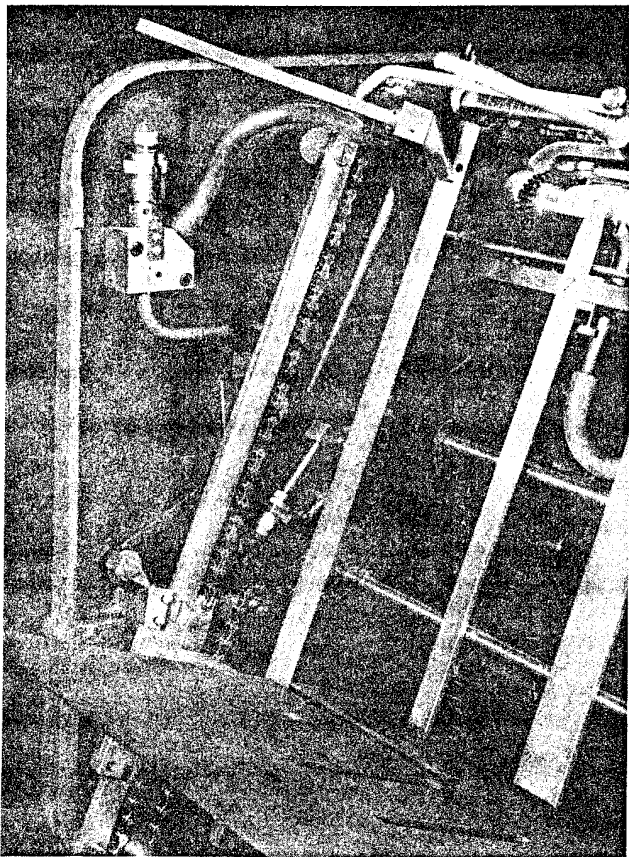
The drop guides are operated from an adjustable cam on the feeder cam-shaft. The timing of the cam is set at the factory and need not be changed unless drop guides are tearing sheet or releasing it too soon. An adjustable stud in the drop guide shaft-lever is used to set the operating link stud in relation to the flat on the cam-lever. This should be set for .005 to .010 clearance, when the cylinder grippers are about 1/2-inch from the drop guides, just before taking the sheet on the feedboard.

Loading the Feeder

To load the feeder, hold the pile elevating handwheel with one hand and with the other raise the pile elevating mechanism control lever to its in-operative position. Turn handwheel counterclockwise to lower feeder table. Set pile side guide bars to width of pile. The pile side guide bar support shaft is graduated to simplify this setting. The pile should be off center in the feeder to compensate for

side guiding ($\frac{1}{8}$ inch to $\frac{1}{4}$ inch) and there should be about $\frac{1}{2}$ inch clearance between each bar and the pile to prevent binding the sheets. The feeder table will hold $17\frac{1}{2}$ inches of stock (approximately 4000 sheets of medium weight paper).

It is advisable to "fan" or "wind" stock before placing it on the feeder table and to feed the smooth edge of the paper forward for best results.



The pile elevator is provided with automatic brake to prevent damage if pile falls accidentally. When control lever is in lowest position the automatic elevator works. With lever in middle position the automatic elevator is disengaged and the pile is held by a brake. With control lever in top position the pile may be lowered. The automatic brake trip operates in this position. The brake stops the pile board before it reaches the lowest position of its travel. If it is desired to use a full pile, the board may be lowered the remaining distance by means of the handwheel even though the brake is engaged. To raise the pile board after the brake has tripped, push release handle to low position to disengage brake and turn handwheel clockwise. After board has been raised two or three inches, raise release handle to top position with both brake and ratchet pawls disengaged and continue turning handwheel clockwise.

Setting Pile Height Gage

Raise top of pile level with scribed line on front center pile guides. Slide height gage finger in or out so that it contacts the pile about $\frac{1}{8}$ inch from the back. Lock in position. Turn finger adjusting screw until lower end of height gage rod is about $\frac{1}{8}$ inch from the latch (inside feeder frame, back of handwheel). The pile will raise automatically as stock is fed. To disengage the elevating mechanism, raise the lever projecting from under the pile elevating handwheel to middle position.

Adjusting Suction

A suction release is provided on the inside of the feeder side feeder frame. The adjusting collar may be rotated to give proper suction for any weight of stock. The collar is marked H, N and L to indicate high, normal and low respectively. Almost all stocks may be fed with the valve set to the normal position. On light stocks it may be necessary to reduce the suction. When using rubber sucker tips reduce the suction to avoid tendency of suckers to curl up away from sheet.

Setting the Blast

The amount of blast is regulated by turning the adjusting screw to the right for increase, and to the left for reduction. To raise the blast nozzle, set the adjusting handle to the left and tighten the thumbscrew to hold setting. The blast should be opened completely when running lightweight paper. See illustration of adjusting screw on pages 2 and 13.

It should be kept in mind that one pump furnishes both vacuum for feeding, and blast for separation of sheets in feeder. For this reason, when setting blast full and with vacuum closed, full efficiency of the pump will not be obtained, since only the air coming through vacuum side passes out blast side. Too, the excess load on the pump will slow down the motor, also giving less air volume. A blast relief valve is provided at the feeder end of the column adjacent to the glass jar of the centrifugal oil separator. This valve is adjusted to bleed part of the blast at all times in order to prevent excessive fluctuation in the blast due to the feeding of sheets.

Normally this setting should not be changed since the above mentioned adjusting screw on the feeder frame provides sufficient variation for all stocks.

Setting Feeder Stripper Fingers

There are two feeder stripper fingers mounted on the feeder bar in front of the air blast tube; their purpose is to assist in sheet separation and preventing two-sheet pick up. If too much stripper is used they will pull sheet from suckers; if not enough they will allow two sheets to be picked up by sucker bar.

Paper Suckers

Three sets of suckers are supplied with the Little Giant Model No. 6: one set for paper, one set for cards, and one

set for envelopes. Rubber cups are furnished for use with the card and envelope suckers.

Only the paper suckers have a tapered cut across the bottom. When the narrow end of the cut is facing the cylinder, the sucker is in the operative position. All suckers have one side of the stem beveled. When this faces the feeder end, the sucker is in operative position.

When running small sheets, the suckers that do not contact the sheet should be made in-operative. To do this, turn suckers completely around in off position.

The sucker plates are for use with thin stock that has a tendency to buckle between the suckers. The center plate can be used for light paper when found necessary.

Paper Feed Rolls

These rolls control and forward the sheet after it has been advanced by the suckers. Keep adjustable spring tension as light as possible to control the sheet. Heavy stock may need more tension than light stock.

Tension Rolls

Tension rolls should be set close enough to the paper feed rolls to control the sheet before it passes from the latter, but not too far forward to rest on the sheet when it is being pushed by the side push guide.

Ball Holders

Steel balls are used to control the sheet after it has passed beyond the tension rolls and onto the conveyor belts. The balls may rest on any part of the sheet. For light stock, move the balls back so that they rest on the sheet when sheet is down to the drop guides. If the sheet buckles at the drop guides, it indicates that the weight of the balls is excessive and that there is too much drive on the sheet. When the sheet rebounds from the drop guides more tension near the tail of the sheet must be used. Keep the steel ball holders free from paper dust, and note that holders are not resting on the conveyor belts.

Feeder Chains

Feeder Chains must be reasonably tight to insure a properly operating press.

If either section of the feeder drive-chain is loose, adjust idler lever engaging that chain.

Ink Fountain

To keep the ink fountain in perfect condition:

1. Do not fill the fountain to full length with ink when only a small sheet is to be printed, and do not bind the blade on both ends by excessive tightening of the screws.

Instead, use two fountain dividers, spaced the width of the form.

2. Do not pound the corners of the fountain blade if making paper balls for dividers.
3. Do not expect the fountain to function indefinitely with easy adjustments without an occasional cleaning underneath the blade. Put a drop of oil on the threads of the screws. Back-off fountain thumbscrews one or more turns before removing blade, clean, replace and reset screws.
4. Do not tighten the adjusting screws with a wrench or pliers. Always remove the blade, which is done easily and quickly, in changing from one color ink to another. Clean all parts thoroughly. This applies particularly when changing from black to colored ink.

Adjusting Ink Fountain

Turn handwheel until bed is at feeder end. Fountain will then be accessible, and ductor roller can be tripped so that it will contact the fountain roller. Turn fountain roller with crank (gear or feeder side) and, working from the one notched center screw, adjust the blade to permit a thin, even flow of ink to the ductor roller. Pull a sheet through impression and, using it as a guide, open the adjusting screws slightly wherever necessary to meet the varying demands of the form.

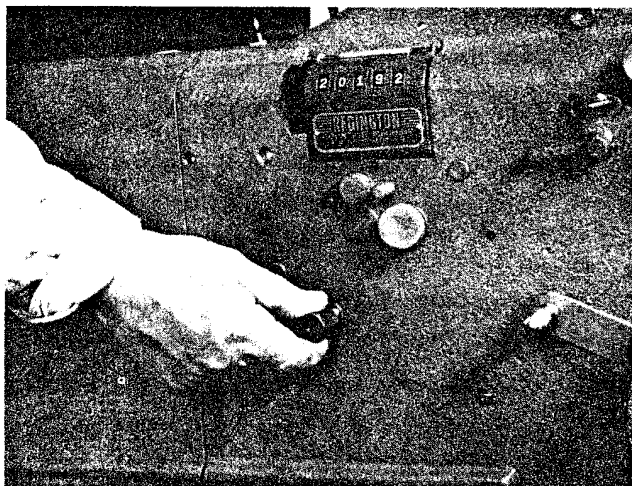
The knob on the feeder side of the press near the handwheel controls the throw of the fountain roller. It is marked from 0 to 16 and should be set while the press is running. The 0 position represents the off position and each number represents an increase in the throw. Set the fountain regulating knob to throw the fountain roller four or five notches each impression. Make final adjustments after inspection of "run up" sheets.

Cleaning the Ink Fountain

Turn handwheel until bed is at feeder end, then remove ductor roller. Loosen all blade adjusting screws. Loosen the two blade locking screws at the back of the fountain; push up on the locking screws to remove the blade from its seat against the fountain cheek pieces; remove the locking screws and lift out the blade. Clean the blade and the roller with ink solvent. Never use emery cloth or sandpaper. Replace the blade, first making sure that the abutment plates are in position over the adjusting screws and that the screws are backed out far enough to prevent any contact between the plates and the blade.

Ductor Throw-off

The Little Giant is equipped with an automatic ductor latch which prevents the ductor roller from taking ink from the fountain if a sheet is missed. The latch is engaged when the mark on the knob is pointing up.



Double-Rolling Mechanism

This feature permits taking a sheet at each complete cycle of the press or at every other cycle of the press. It will be found useful when printing solid forms requiring extremely heavy ink coverage and also for slip-sheeting or for collating duplicate forms. Operation is simplicity itself. Merely turn and push control knob in to double-roll or pull out to single-roll. This may be done while press is operating.

The control knob is directly under the suction and blast adjusting knobs on the operator's side of the press.

Adjust double roll control. Turn press until cam roll on suction cam is on lowest point of cam. Now adjust suction valve to an opening of $\frac{1}{32}$ of an inch.

Envelope Attachment

The envelope guides are used when running small envelopes or postcards that have a tendency to swing sideways when leaving the suckers. They are slipped onto the pile side guide bars and held in place by the flat springs. They are operated by the gear side and feed side sucker plates.

The envelope rear pile guide is used when running envelopes to prevent the pile from buckling.

When running postcards or envelopes raise blast mouth-piece to its highest position and use full blast. Run feed table up so work is touching sucker feet in their lowest position, run stripper fingers over work to prevent taking doubles. Be sure to use wooden blocks.

Running Envelopes

When running envelopes, it is important that the following steps be observed:

1. Move feed bar to its lowest point.
2. Place rubber tips on two center envelope sucker feet.
3. Raise stripper fingers high enough to allow blast to

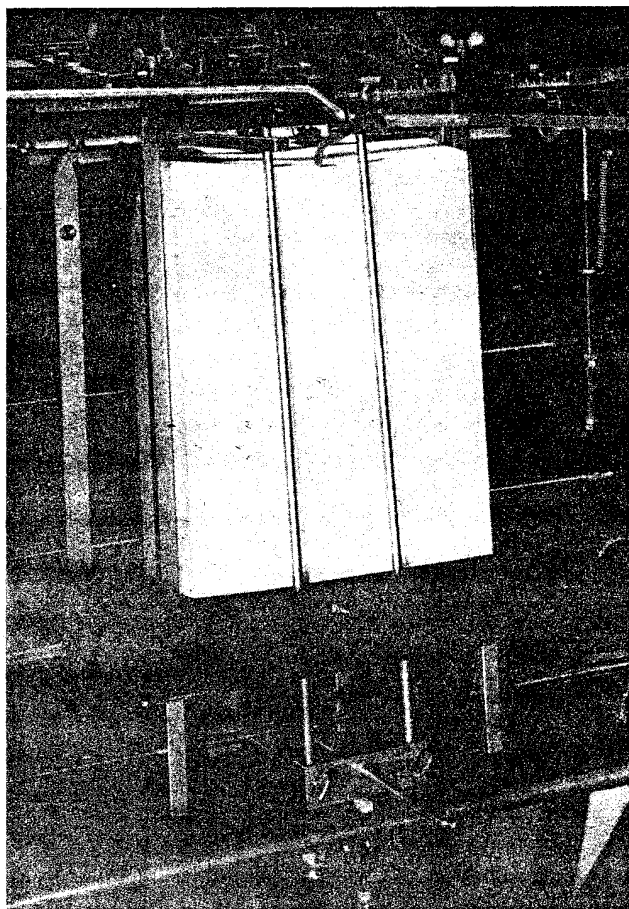
blow envelopes firmly against suckers, this will also keep the envelopes in even pile.

4. Be sure to use guides when running $6\frac{3}{4}$ inch envelopes and wooden platform must be used with guides.
5. All envelopes should be rolled and the leading corners turned down to insure good feeding and delivery.

Running Postcards

To run postcards and small card stock, it is necessary that the following steps be adhered to:

1. Move feed bar to its lowest point.
2. Place rubber tips on two center cardboard sucker feet.
3. Lower stripper fingers so curve on lip will come even with bottom edge of rubber suckers. The stripper fingers must be kept well over cards to prevent suckers from pulling more than one card.
4. Be sure to use guides and wooden platform.
5. Plenty of blast must be used and the suction must be adjusted to pick up one card only.
6. Make sure the space between conveyor wheels is never greater than the size of the job.



Running Solids and Halftones

When running solids on the Little Giant it is important that the pressman has his cuts at .918 and the cylinder packed to bearer height.

Pack cylinder to height of cylinder bearers.

Packing can be made up several different ways as some pressmen prefer different types of packing.

Inking: The pressman should set his fountain and ink up from the fountain, as it will give him an even distribution over entire form, instead of placing ink on rollers with his ink knife. This is very important when making ready solids. Many times a pressman will do excessive overlaying because he tries to make ready with too little ink.

Makeready: Impression should be pulled with proper amount of impression and color. Weak and low places are to be filled in with tissue or folio. This sheet can be used as an underlay if necessary to level up form. Another sheet is pulled after running ten or twenty sheets with proper amount of ink and once again the weak and low spots are filled in with tissue and folio. This sheet is used as an overlay and hung on the cylinder.

Double Roll: The size of the solid, kind of stock and ink used will determine whether the double roll should be used. Quite often it is better to use the double roll when setting color for a large solid and once the color is set it can be turned back to single roll.

Paper: Some paper surfaces are extremely smooth; others, by comparison, are rough. Some have a desirable affinity for ink, requiring only a light pressure and others lack this affinity, necessitating an extremely heavy pressure to properly transfer the ink.

Summary: Cuts or form must be kept at .918 and cylinder packing .055. Impression is to be pulled with proper amount of ink and impression, weak and low spots are to be filled in with tissue or folio, and not by placing an extra sheet over the entire form as nothing would be gained because the high parts of the cut would bear off the low and weak places and lift the cylinder away from the bed bearers with the result the cylinder would be riding the form. The right way to run solids is to fill in the low and weak spots, prevent any "bear-off" from high parts of the cuts and to keep the cylinder on the bearers.

A Few Hints on Presswork

Patent Base: The standard patent base used by printers in the United States and Canada averages .759 inch thick. For use with standard base, printers usually specify 11 point plates, or plates that are .152 inch thick. Plates of this thickness require, theoretically, an underlay of .007 inch. It is general practice to place a sheet of that thickness under each plate when first laid on the base.

Inks: The printing ink which can be used successfully under all conditions is not made. It is necessary to suit the ink to the paper. Consult the ink maker on these problems, and on out-of-the-ordinary work submit samples of the stock to him. Buy ink suitable for the work to be done. Trying to improve on ink by the addition of various substances such as kerosene, vaseline, varnishes, etc., should never be resorted to except in cases of emergency.

Numbering Jobs: Numbering machines may be worked in any position except with the "No." or plunger nearest the gripper edge. In this position the cylinder depresses the plunger and then passes over the figures. The wheels turn when the plunger rises, so that if run in the above position they are trying to turn while under impression, resulting in slurred figures, broken pawls and springs, and torn packing. This is true on any cylinder press.

If hard rollers are used, do not set them too low, as they may depress the plunger. If the figures or letters near the

plunger are not inked, it is because the plunger is holding the rollers off. Cut a slot around one roller in line with the plunger, just wide enough to let the plunger through. This roller will ink all the form except the plunger, which will be inked by the other rollers. Often, the use of one soft form roller will remove all trouble of this nature.

Avoid soft packing on long runs as the plunger will work in and then fail to turn the wheels because of lack of impression. A piece of pressboard glued under top drawsheet resists plunger pressure for a long run. Numbering machines, especially those with open sides, will not operate if locked up too tightly. Test the plunger with the fingers and make sure that it rises freely.

Clean the machines thoroughly after using. Completely immerse them in kerosene until ready to use again, when they should again be cleaned and the bearing oiled.

Perforating Jobs: When perforating deeply, parallel with the cylinder, it is good practice to attach a strip of adhesive tape to the outside of the top drawsheet over the perforation, extending about ¼ inch on each side, if the printing will allow it.

If it is desired to run a perforating rule at right angles to the cylinder without printing the rule, it may be accomplished by cutting the form rollers so that they will not ink the rule. Another method is to grind off the bottom of the

rule until it is sufficiently below type-high to prevent the rollers from inking, and then build up the makeready over the perforating rule to the required height. A strip of 1 point brass rule glued securely just below the top drawsheet, insures a clean, sharp perforation. In perforating or cutting heavy stock it is advisable to lock the rule between two 5-line pieces of furniture, placed on edge to support the rule.

Thin Paper: Onionskin, French folio, tissue, lightweight bonds, etc., should be run with light air blast, light suction, and light tension on the paper feed rolls, tension rolls and balls. Be careful not to buckle the sheets at the drop guides. If the sheets crumple in the caliper, the caliper may be opened slightly. If the stock is porous, the top drawsheet may require frequent washing and oiling on account of the ink squeezing through the stock.

Heavy Paper and Card Stock: Light and medium weight box and litho boards, tag board, postcard stock, etc., up to 4 ply, will work successfully. As a rule the full blast and suction will be required. Endeavor to get the top of the pile as level as possible. If necessary, place the tension rolls at the tail of the sheet when sheet is against the drop guides to prevent the sheet from rebounding. Make sure that the sheets are not retarded in the conveyor mechanism because of wavy stock. Stiff stock printed with a narrow margin has a tendency to bulge and slur or "wipe" as it leaves the form. A 5-line piece of furniture locked on edge just back of the form will usually eliminate a "wipe." Or, if stock will permit a slight trim at the tail, lock a lightface rule across the form, to print on the tail of the sheet about a nonpareil from the edge. Drive tacks or brads a few inches apart close to tail edge of form, just low enough to avoid marking the paper.

Dull Coated Papers: Halftones, to print well on this stock, should be deeply etched, not finer than 120 screen, and the cut overlay should be slightly thicker than for enameled paper. The impression should be only as heavy as to give unbroken contact of dots with paper. Use a good grade of fairly heavy, tacky ink. Watch the halftones closely for filling up. Consult your ink maker or paper maker, if you experience any ink troubles.

Gummed Paper: With the ATF Little Giant, and the high grades of flat non-curling gummed paper now being manufactured, the objections to this class of work have been greatly reduced.

In cutting gummed paper for the press, a sharp knife should be used as under the most favorable conditions the paper cutter knife will cause the edges of the stock to stick together. To overcome this, loosen and "wind" the sheets thoroughly while loading the feeder.

Keep the stock in a cool, dry place, as dampness or moisture will make the edges stick together; if piled near heat of any kind they will "dry out" and curl.

Keep the top drawsheet on impression cylinder well oiled so that printed sheets may be easily delivered from cylinder.

Antique and Rough Cover Paper: Deckle Edge Paper: Jog the stock well toward the gripper and side guide edge when loading the feeder.

Slurs and Streaks: When a slur appears it is always best to inspect carefully your work first. Then see that the form is tight and properly justified. There are different kinds of slurs, from various causes, some of which are described below and remedies suggested:

Slur at margins: This may be caused by (1) Form over or under type-high and the cylinder overpacked or underpacked to compensate for it. The remedy is to have the cylinder reset to bring it down on the bearers. Make the form type-high (.918 inch) and then bring the packing to the proper thickness. This kind of slur is noticeable near the margins at a point where the impression leaves one page and starts on the next because the surface of the sheet, if the cylinder is overpacked, is actually running faster than the form, or vice versa. (2) Soft or wavy packing or a loose top sheet. This is also generally noticeable in the margins. Change to a hard packing with a smooth oiled, tight top drawsheet. Keep the bearers clean. Never put rosin, magnesia, or any other substance on the bearers. Some other causes of slur: if the form contains warped electrotypes blocks or furniture, or is clamped too tight, slurs may result due to the form not being down firmly on the bed during impression.

Hard rollers may cause thin ink to squash out on the edges of the type face, etc., and slur parts or all of the form. The remedy is stiffer ink or softer rollers. If rollers are set too low, they may jump when they strike the form and, as they come down on the form, leave a streak. This will also wear the rollers rapidly. If rollers are not in proper contact with the vibrators, they will spin when they strike the edge of the form.

Work-Ups: Work-ups are caused by (1) The form not being down firmly on the bed of the press during the impression, due to improper locking of the form on the press; (2) Rocking cuts.

Remedies: (1) Unlock all the quoins and the chase clamps. See that the chase is not bent or sprung and that all the furniture used is square. Sometimes, turning the furniture over will help. Then lock evenly and squarely, locking the chase first, then the quoins. The form should not be locked too tightly, as this may cause it to spring up. A strip of card about a nonpareil high locked in the form at the foot of the offending quads, etc., will sometimes stop them from working up. (2) Measure the cuts to see that they are type-high or the same height at every point. Heavy solid cuts or blocks should be a trifle higher than type-high, vignettes a trifle lower.

Wrinkles: Wrinkles, or buckles, are due to several causes. If the sheet is wavy, when taken by the grippers, the wrinkle works itself out to the back edge of the sheet. The sheet must not be buckled when taken by the grippers, and if buckling is due to the stock, turn a few lifts over on the pile. Most of this trouble is found in forms with panel borders, rules, or narrow spaces between pages.

If the wrinkle is in a panel or open space along the border of pages, the paper stock, at some previous time, may have been exposed to dampness, the outside of the pile having absorbed the moisture before the center. This lengthens the stock at the outside edges, and when the stock passes between the form and cylinder, the longer outside edges will be drawn in at ends and cause a wrinkle. This can be overcome by using breakers glued securely to the top drawsheet. A breaker is a small strip of 3- or 4-ply cardboard. It should be as wide as the outer margin will permit. The breaker should extend inward between the cuts or type pages about 1/2 inch and beyond the outside edge of the sheet. If necessary, a second breaker can be placed in the next margin from the gripper edge. Be careful that the breaker is not in too far and as close to the cuts as possible without marking the sheet.

See that the conveyor is feeding sheet to guides properly. Sheet should not buckle against the drop guides. Make sure that sheet is all the way against the side register plate. See that the brush holds the sheet against cylinder. Run the whole job at a uniform speed. Keep the cylinder bearers and bed bearers clean.

A form composed largely of metal will not be affected by changes in temperature or humidity so much as one in which wood furniture and bases are used.

Static Electricity: The amount of moisture in the air has a marked effect on the behavior of paper in relation to static electricity. In warm moist weather, the presence of the

electricity is not noticeable. Dry air acts like an insulator for electricity, as it holds but little moisture. Consequently, the static electricity in the paper has no means of escape. The ATF Gas Heater will eliminate practically all static.

Register: Register on all classes of work is obtained on the ATF Little Giant. Certain precautions must be observed by the operator before starting the run and on work requiring very close register. Enough tension must be used on the sheet to drive it positively to the drop guides without buckling. Never place tension rolls directly on the sheet as they will retard the action of the side guide, and loss of side register will result. Remember that the larger sheet and heavier stock require more tension to carry and hold it to the drop guides than lightweight stock. Make sure that all clamp screws are tight and all adjustments are properly made, as given in the instructions for the various parts.

It is an accepted practice on all cylinder presswork, when a job is ready to run, to print a number of sheets and run them through the press again to test the register. On long runs this should be done at frequent intervals.

Do not expect to obtain perfect register on paper which is curled, wavy, has rough edges, or has been folded in bundles. Stock, especially coated paper, will absorb moisture readily and therefore should be kept in a dry place until ready for the press. Dampness causes the edges of paper to curl and stick together.

Static electricity, generally found in pressrooms where an uneven temperature is maintained, will cause sheets to adhere, making it difficult to feed them accurately. The remedy for this is an automatic gas heater and even, warm temperature in the pressroom.

Oil the packing thoroughly before starting. If the top sheet or impression is changed, it may change the register. If the gripper bite is too hard, making an indentation in the packing, the sheet is scuffed back, affecting the register.

The ATF FLO-MIX Non-Offset Gun

Assures complete protection from offsetting, without tray-ing, slip-sheeting, or ink doctoring. Full color can now be used on each job without offsetting, using the ATF Flo-Mix Gun on each color of 4-color printing. Will not affect the quality of the work in any way. Also used successfully on overprint varnish, metallic and gloss ink jobs.

The Gun discharges a superfine blanket of dry powder on each printed sheet, keeping one sheet from touching another . . . therefore, no chance for offsetting or sticking. Deposit on sheet cannot be detected by the naked eye.

The fine particles are spread to all parts of the sheet, forming a cushion which keeps sheets apart, completely protects the freshly printed surface and allows the ink to

"set" without its being rubbed by the next sheet delivered. Heaters should be kept running on presses with the ATF Non-Offset Gun. They assist in elimination of static in paper, also in the setting and drying of the ink.

Operation of Gun: The ATF Flo-Mix Gun is a simple dependable device designed to give maximum results on your press or presses from smallest to largest sheet size.

Compressed air at low pressure is used to discharge the protective powder from orifices in close proximity to the sheet. Two independently adjustable powder discharge nozzles are used on a Little Giant Press and on all presses up to 25x38 sheet size.

The low air pressure necessary and the controlled proximity of the nozzle to the sheet minimize the possibility that a portion of the non-offset material will be dissipated into the surrounding air and on to press parts.

The Gun is designed so that all adjustments are quickly and easily made. Few moving parts result in a minimum of maintenance and lost time because of breakdown.

Economy of Operation: The ATF Flo-Mix Gun uses a specially compounded dry powder, non-toxic in nature, and reasonably priced. A pound of Flo-Mix powder will cover about as much sheet area as a gallon of liquid used in the old type liquid guns. The cost will be approximately 40% less than liquid.

Because of better control of non-offset material, very little is wasted through being misdirected or blown away from the area to be protected.

It is important for economical operation that the Gun be properly adjusted for each job printed. Only enough powder to stop offset should be allowed to reach the sheet. Very often the amount of powder necessary is not readily visible to the naked eye.

Brief Summary of Operation: Remove moisture from air cleaner each morning, by opening air drain screw, until air is dry.

When starting a job, the adjustments for amount of powder should be made so that the discharged Flo-Mix powder is barely visible to the eye. If sheets are not entirely clean, increase gradually until proper amount is reached to eliminate offset completely.

Send to your nearest ATF Branch for a copy of the Instruction Book on the operation of the ATF Non-Offset Gun if you do not already have one.

Trouble Shooting Chart

TROUBLE	PROBABLE CAUSE	REMEDY
Feeder Picking up two sheets.	No petcock.	Now use blast relief valve.
	Feeder blower nozzle set at wrong height.	
	Top of pile height too high or low.	Check height of pile.
	Sheets not up to front pile guides.	Check that rear pile guides are properly positioned.
	Sheets sticking due to offset, dull knife, static electricity.	Separate sheets by rolling sheets before placing them on pile table.
	Stripper fingers not properly adjusted.	Check stripper for correct height and adjust with more stripper action.
Feeder suckers do not pick up sheet.	Porous stock.	Paste gum paper on sucker tips and punch holes in center of paper.
	Leak in sucker line.	Sucker tips not fully shut off or on, causing leak.
	Leaky sucker tips.	Check air line.
	Improperly placed strippers.	Too much stripper will pull sheet off suckers. Release stripper tension.
	Sheet curled up or down causing failure of suckers to seal.	Roll curl out of sheet and run as flat as possible to make good contact.
	Pile guides set too tight.	Check sheets are not binding due to incorrect setting of side and rear pile guides.
	Pile too high or low.	Check height of pile.
	Sheets sticking due to offset, dull knife, static electricity.	Separate sheets by rolling before placing on pile table.
	Wrong sucker feet being used.	When running real heavy papers, cover stocks, cards and envelopes, be sure and use two center suckers with rubber cups.

TROUBLE	PROBABLE CAUSE	REMEDY
Sheets piling on feed-board and causing batters.	Pile guides set too tight cause sheet to be late at grippers, causing batters.	Check side and rear guides for clearance at side guide.
	Sheet set too close to side guide, hitting guide and twisting at grippers.	Check and make sure you have clearance at side guide.
	Sheets pinching under caliper causing sheet to be late at gripper.	Check caliper with two sheets, make sure one is free and not pinching.
	Offset sheets sticking together causing them to twist and arrive late at drop guide.	Prevent offset, roll all stock and make sure they are not sticking.
	Curled stock rolling under causing sheets to arrive late at grippers and piling up under cylinder trip detector.	Roll stock and keep as flat as possible.

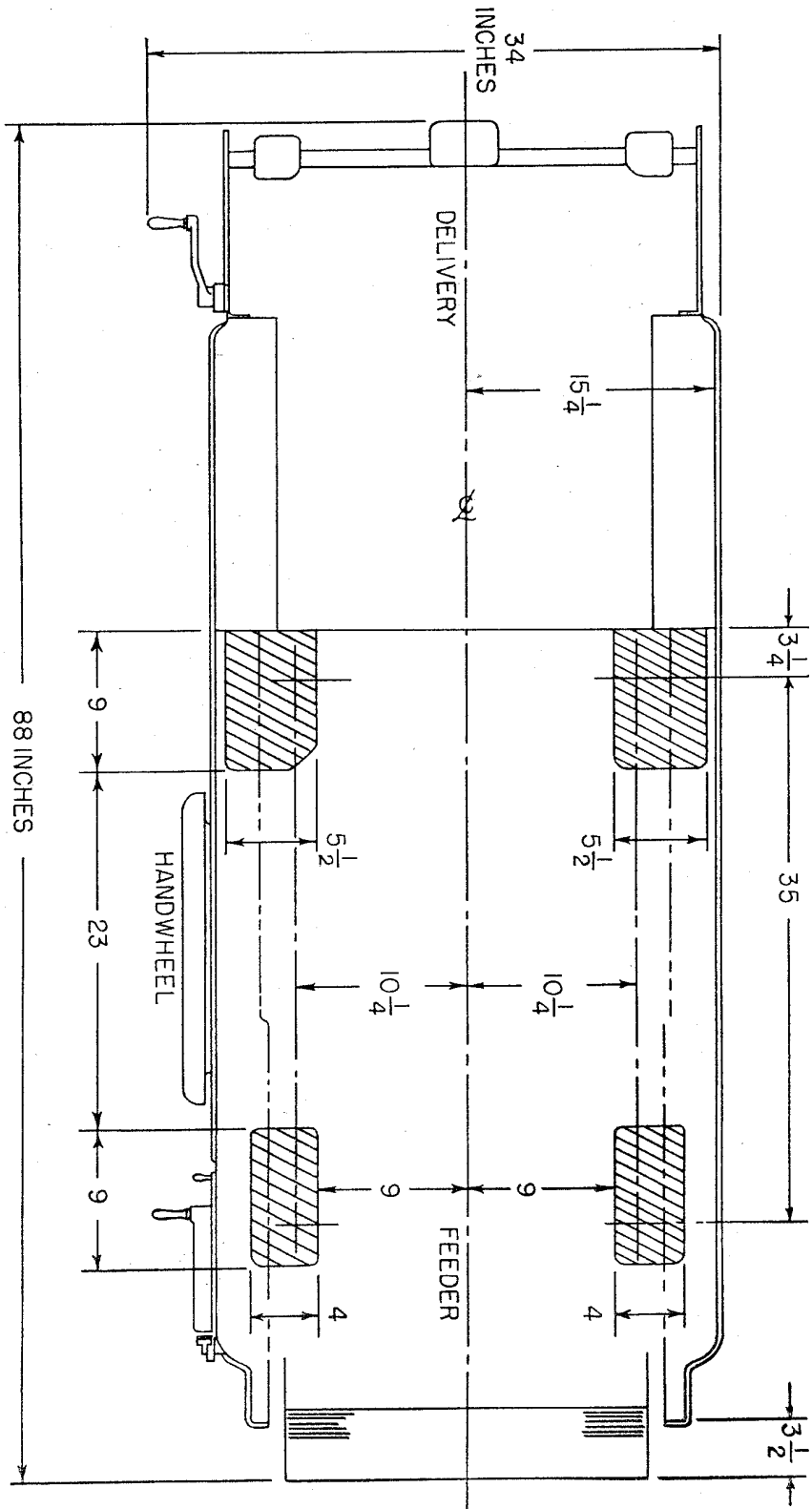
Register

Sheets out of register.	Double motion on feedboard.	Tension spring set too tight on drop guide.
	Gripper bar set too high over packing.	Stops on gripper bar will push stock back from grippers if set above packing especially if stock is curled down. Lower gripper bar even with packing. Cut Vee's in packing between cylinder and delivery grippers.
	Tension wheels set too heavy on end of sheet.	Adjust proper tension on tail end of sheet. Never too much to prevent side guides from pushing sheets freely forcing sheets to buckle or bunch at drop guides.
	Static electricity.	Use heater to eliminate static electricity.
	Conveyor tapes lagging.	Keep proper tension on conveyor tapes. Keep tape pulleys greased and moving freely.
	Sheets not in alignment when fed into side guide.	Check feeder pile guide settings.
	Sheets curled up and cylinder grippers push it back when closing.	Use card strips under shield plate at head stops to hold sheet down. Roll curl out of sheet.
	Side guide kicks sheet too far.	Keep some tension on sheet.

Sheet Not Being Delivered

Delivery grippers fail to remove sheet.	Static electricity, sheets sticking to packing.	Cut Vee's in packing between delivery and cylinder grippers. When running heavy forms, on coated papers, run strips of cards in gutters to release sheet from cylinder. Use Spherekote top sheet.
	Backing up job when ink is still wet.	Keep top sheet well oiled as wet sheet will stick to packing. Use Spherekote top sheet.
	Curled down sheets.	Cut Vee's in packing. Roll curl out of stock.
	Delivery grippers set too low, pushing sheet off cylinder.	Check delivery gripper with cylinder on impression, adjust delivery fingers to clear packing about .010.
	Cylinder grippers not opening wide enough.	Adjust opening of grippers $\frac{3}{8}$ ".
	Delivery grippers set unevenly.	Have cylinder on impression, run delivery grippers up to cylinder until they snap and close. Reset all fingers evenly with about .010 clearance.

TROUBLE	PROBABLE CAUSE	REMEDY
	Perforating rules sticking to packing.	Use metal strips when possible when perforating with proper amount of impression. Adhesive tape or any other pulley material with too much impression will cause sheet to stick to packing and pull out of gripper fingers. Use Spherekote top sheet.
Slur.	Cuts over .918.	Run bearer .918 or .920 alongside cut and type to prevent cylinder from wearing type when dropping off cut which is over type high.
Tail Wipe.	Narrow margin on end of job.	Use five pica piece of furniture on side and glue sandpaper on furniture. This makes it type high. Place this furniture up against last line of type in form and stock will rest on furniture instead of rubbing end of form.
	Wiping on end of form.	Use pointed slugs on tail end of job close to end of form allowing sheet to rest on slug instead of striking end of form.
	Card run against grain.	Whenever there are margins on end or center of form an elastic narrow ribbon may be used to hold sheets or cards from wiping on end of form. This ribbon can be tied and run from under the brush and cylinder and made fast to the square bar to which the sheet bands are attached.
	Rollers set too low.	The give in the elastic ribbon allows the cylinder to go off and on impression without breaking it. Sometimes rollers are set too low and the tail end of form accumulates and piles up ink. This in turn wipes on end of job being printed. Reset rollers to prevent this condition.



Floor Plan and Dimensions of ATF Little Giant Model No. 6